

XXIX.—On the Mollusca collected by Mr. G. A. Ramage at the Island of Dominica. By EDGAR A. SMITH*.

WITH the exception of a small *Vaginula* none of the fifteen species of terrestrial Mollusca in the collection made by Mr. Ramage are new to the fauna.

Mr. R. J. Lechmere Guppy † was the first to attempt a complete list of the terrestrial forms occurring in Dominica, and this list with some modifications was reproduced by Kobelt ‡ in his series of papers on the distribution of land-mollusks. Twenty species are there enumerated, of which nine are said to be peculiar to the island, the remaining eleven being met with on one or other of the neighbouring islands.

In 1881 Mr. A. D. Brown § criticized some of Mr. Guppy's observations respecting the distribution of certain forms, and gave a list of twenty species collected by himself. Eight of these are not quoted by Mr. Guppy.

An abstract of Mr. Brown's paper is given in the 'Journal of Conchology,' vol. iii. p. 182.

Mr. G. F. Angas || has since published an account of the species he collected during a short visit in the early part of the year 1883. Of the twenty species he obtained three are new to both Brown's and Guppy's catalogues. Altogether, including the new species of *Vaginula*, the total number of species from Dominica now amounts to thirty-three. Ten of these, so far as at present known, are peculiar to the island, and the remainder are variously distributed; about five of them occur as far north as Porto Rico, three or four at St. Vincents and St. Kitts, two or three at St. Thomas, and two species at Barbados. More species, however, are common to Guadeloupe and Martinique than to any other of the islands, and this, from their greater proximity to Dominica, would naturally be expected. A few species, however, range beyond the West Indies, one or two occurring in Mexico, one at Panama, one in Peru, and another in Bolivia.

* This collection forms part of the first consignment of specimens recently received from Mr. Ramage, who, under the auspices of a joint committee of the Royal Society and the British Association, is making collections of the fauna and flora of the Lesser Antilles. The species collected by Mr. Ramage are marked with an asterisk in the list appended.

† Ann. & Mag. Nat. Hist. 1868, vol. i. pp. 429-435.

‡ Jahrb. Deutsch. Mal. Gesellsch. 1880, p. 233.

§ 'American Naturalist,' 1881, vol. xv. pp. 56, 57.

|| Proc. Zool. Soc. 1883, pp. 594-597.

As no references are given by Guppy, Brown, Angas, or Kobelt, I have appended a complete list of all the known species, supplying that desideratum, and at the same time indicating the known geographical distribution of each species.

1. **Vaginula occidentalis* (Guilding).

Onchidium occidentale, Guilding, Trans. Linn. Soc. 1823, vol. xiv. p. 323, pl. ix. figs. 9-12.

Hab. St. Vincents, Guadeloupe ; Dominica (*Angas and Ramage*).

2. **Vaginula*, sp.

Six specimens, averaging about three quarters of an inch in length, were obtained by Mr. Ramage, which seem distinct from the preceding species. They are in rather poor, soft condition, and scarcely fit for describing. They are darker above and below than *V. occidentalis*, shorter, apparently less tapering at the extremities, and have the foot as well as the lower surface on each side dotted. The general tint is coffee-brown, varied on the dorsal surface, which does not exhibit a pale median line, with irregular blackish dots and spots. The lower surface, especially the creeping-disk, is paler and is also dark-dotted. The dotting on the foot is down the centre, leaving pale lateral margins. The female orifice is equidistant from the extremities and quite close to the foot.

3. *Oleacina perlucens* (Guppy).

Glandina perlucens, Guppy, Ann. & Mag. Nat. Hist. 1868, vol. i. p. 430.

Oleacina perlucens, Pfeiffer, Mon. Hel. vol. viii. p. 324.

Hab. Dominica (*Guppy*).

4. **Stenogyra octona* (Chemnitz).

Hab. Many of the West-India islands, Panama, Caraccas ; Dominica (*Guppy, Brown, Angas, Ramage*).

For the synonymy and references of this species see Pfeiffer's Monogr. Heliceorum.

5. *Leptinaria lamellata* (Pot. et Mich.).

Achatina lamellata, Pot. et Michaud, Gal. Moll. vol. i. p. 128, pl. xi. figs. 7, 8 ; Pfeiffer, Mon. Hel. vol. ii. p. 272, vol. iii. p. 523 (*Tornatellina*).

Pupa lamellata, Küster, Conch.-Cab. p. 147, pl. xviii. figs. 1, 2.
Achatina lamellata, Deshayes, in Férussac's Hist. Moll. vol. ii. p. 170,
 pl. cxxxiv. figs. 12-14.
Cionella (Leptinaria) lamellata, Pfr. Nomen. Helic. p. 335.

Hab. Bolivia, Peru; Dominica (*Angas and Brown*).

With this species Mr. Angas has united *Lep. antillarum*.
 With this determination I agree, and am also of opinion that
L. Funcki, Pfr., *L. perforata*, Pfr., *L. lamellosa*, Rve., and
L. concentrica, Rve., also are mere slight varieties of the same
 form.

6. **Helix (Macrocyclis) concolor*, Férussac.

Helix concolor, Férussac, Hist. Moll. vol. i. p. 98, pl. lxxxii. fig. 2;
 Delessert, Recueil. pl. xxvi. fig. 1; Pfeiffer, Conch.-Cab. no. 525,
 pl. lxxxv. figs. 4-6; Chemn. Ill. Conch. pl. viii. fig. 15, pl. xii. fig. 1;
 Reeve, Conch. Icon. pl. lxi. figs. 304 *a, b*.
 ? *Helix Baudoni*, Petit, Journ. Conch. 1853, p. 364, pl. xi. figs. 4, 5.
Hyalina Baudoni, Guppy, Ann. & Mag. Nat. Hist. 1868, vol. i. p. 430.
Zonites concolor, Angas, P. Z. S. 1883, p. 594.

Hab. Porto Rico (*concolor*), Guadeloupe (*Baudoni*); Dominica
 (*Angas, Brown, Guppy, and Ramage*).

I think it somewhat doubtful if Angas is right in uniting
 the above two forms. The difference of colour, the smoother
 surface, and flatter whorls of *H. Baudoni* may be sufficient
 to distinguish it.

7. **Helix (Dentellaria) Josephinæ*, Férussac.

Helix (Helicodonta) Josephinæ, Fér. Prodr. 125; Hist. Moll. vol. i.
 p. 151, pl. lvi. figs. 5-10.
Helix Josephinæ, Pfeiffer, Conch.-Cab. pl. lxii. figs. 11, 12; Reeve,
 Conch. Icon. pl. lvi. fig. 272.

Hab. Guadeloupe and Martinique; Dominica (*Guppy,
 Brown, Angas, and Ramage*).

8. **Helix (Dentellaria) badia*, Férussac.

Helix (Helicodonta) badia, Fér. Prodr. 124; Hist. Moll. vol. i. p. 150,
 pl. lvi. figs. 1-4.
Helix badia, Pfeiffer, Conch.-Cab. no. 366, pl. lxiii. figs. 7-10; Reeve,
 Conch. Icon. pl. lvi. fig. 274.

Hab. Martinique, Guadeloupe, Cayenne; Dominica
 (*Guppy, Brown, Angas, and Ramage*).

9. *Helix (Dentellaria) dentiens*, Férussac.

Helix (Helicodonta) dentiens, Férussac, Hist. Moll. vol. i. p. 147,
 pl. xlvi. fig. 2, pl. xlvi. fig. 2, pl. xlix. a. fig. 2.
Helix dentiens, Wood, Index Test. Suppl. pl. vii. fig. 48; Pfeiffer,

Conch.-Cab. ed. 2, pl. xv. figs. 11-13; Reeve, Conch. Icon. pl. lii. fig. 250.

Helix isabella, Férussac, Reeve, *l. c.* pl. lii. fig. 249.

Helix dentiens, Angas, Proc. Zool. Soc. 1883, p. 596.

Hab. Martinique, Guadeloupe, Cayenne; Dominica (*Guppy, Brown, and Angas*).

10. **Helix (Dentellaria) nigrescens*, Wood.

Helix nigrescens, Wood, Ind. Test. Suppl. pl. vii. fig. 32; Pfeiffer, Conch.-Cab. ed. 2, no. 50, pl. x. figs. 15, 16; Reeve, Conch. Icon. pl. lvii. fig. 280.

Hab. Guadeloupe; Dominica (*Angas, Brown, Guppy, and Ramage*).

11. **Bulimus (Leiostracus) laticinctus* (Guppy).

Bulimulus laticinctus, Guppy, Ann. & Mag. Nat. Hist. 1868, vol. i. p. 431.

Hab. Dominica (*Guppy and Ramage*).

Two varieties of this species are mentioned by Mr. Guppy, one with and the other without bands. The single specimen obtained by Mr. Ramage belongs to the banded form.

12. *Bulimus (Leiostracus) virginalis*, Pfeiffer.

Bulimus virginalis, Pfeiffer, Mon. Helic. vol. iv. p. 405; Novitat. Conch. vol. iii. p. 422, pl. xevi. figs. 1, 2.

Hab. Mexico; Dominica (*Brown*).

13. *Bulimus (Leiostracus) liliaceus*, Férussac.

Helix (Cochlogena) liliaceus, Férussac, Prodr. 401; Hist. Moll. vol. ii. pt. 2, p. 83, pl. cxlii B. figs. 11-14.

Bulimus liliaceus (Guilding), Reeve, Conch. Icon. pl. xlv. fig. 287.

Hab. Porto Rico, St. Kitts, and Mexico; Dominica (*Angas*).

14. *Bulimus (Leiostracus) multifasciatus*, Lamarck.

Bulimus multifasciatus, Lamarck, Delessert, Recueil. pl. xxviii. fig. 3; Reeve, Conch. Icon. pl. xlvi. fig. 295; Pfeiffer, Conch.-Cab. no. 337, pl. lxiii. figs. 11, 12.

Bulimus picturatus, Férussac, Potiez et Michaud, Galér. Moll. p. 147.

Hab. Guadeloupe, Martinique, Cayenne, La Guayra; Dominica (*Angas and Brown*).

15. **Bulimus (Thaumastus) Nichollsi*, Brown.

Bulimus Nichollsi (Brown), Amer. Nat. 1881, vol. xv. p. 57; Angas, Proc. Zool. Soc. 1883, p. 596, p. 595. figs. 2, 3.

Hab. Dominica (*Brown, Angas, and Ramage*).

16. *Bulimus (Thaumastus) exilis* (Gmelin).

Helix exilis, Gmelin, Syst. Nat. p. 3668.

For the synonymy of this common West-Indian shell see Pfeiffer's Monogr. Hel. vol. ii. p. 224, iii. p. 433, iv. p. 498, vi. p. 146.

Hab. Guadeloupe, St. Thomas, Porto Rico, Cayenne, Barbuda, Barbados; Dominica (*Guppy and Angas*).

17. *Bulimus (Peronceus) stenogyroides*, Guppy.

Bulimulus stenogyroides, Guppy, Ann. & Mag. Nat. Hist. 1868, vol. i. p. 431.

Hab. Dominica (*Guppy*).

18. **Amphibulima patula* (Bruguière).

Bulimus patulus, Brug. Encycl. Méth. vol. i. p. 305.

Amphibulima cucullata, Lamk. Ann. du Mus. vol. vi. pl. lv. fig. 1.

Succinea patula, Deshayes, Hist. Moll. vol. ii. pt. 2, p. 140, pl. xi. figs. 14-16, pl. xi a. figs. 12, 13.

Succinea cucullata, Blainville, Man. Mal. p. 455, pl. xxxvii. fig. 2.

Succinea patula, Pfr. Mon. Hel. iii. p. 21; Reeve's Conch. Icon. pl. iii. fig. 21; Fischer (anatomy), Journ. de Conch. 1874, vol. xxii. p. 141, pl. v. figs. 8-12.

Amphibulima patula, Angas, P. Z. S. 1883, p. 595, fig. 1.

Hab. Guadeloupe, St. Kitts, Marie Galante; Dominica (*Guppy, Angas, and Ramage*).

19. *Amphibulima rubescens* (Deshayes).

Succinea rubescens, Deshayes, Mag. de Zool. 1830, pl. iv.; Guérin's Icon. Règ. Anim. pl. vi. figs. 8, 8 a; Hist. Moll. vol. ii. pt. 2, p. 139, pl. ix b. fig. 3; Pfeiffer, Conch.-Cab. p. 36, pl. iii. figs. 34, 35.

Amphibulima (Rhodonyx) rubescens, Fischer, Journ. de Conch. 1874, vol. xxii. p. 145, pl. v. fig. 13 (anatomy).

Hab. Guadeloupe; Dominica (*Brown*).

20. **Amphibulima tigrina*, Lesueur.

Succinea tigrina, Lesueur, Férussac's Hist. Moll. vol. ii. pt. 2, p. 140, pl. xi a. fig. 4; Angas, Proc. Zool. Soc. 1883, p. 595.

Amphibulima pardalina, Guppy, Ann. & Mag. Nat. Hist. 1868, vol. i. p. 432.

Hab. St. Vincent; Dominica (*Guppy, Angas, Ramage*).

21. *Succinea approximans*, Shuttleworth.

Succinea approximans, Shuttl. Bern. Mittheil. 1854, p. 147; Pfeiffer, Mon. Hel. vol. iv. p. 817.

Hab. Guadeloupe?, Porto Rico, St. Thomas, St. Lucia; Dominica (*Guppy and Angas*).

22. *Homalonyx guadeloupensis* (Lesson).

Testacellus guadeloupensis, Lesson, Rev. Zool. 1838, p. 250.

Testacella Matheroni, Potiez et Michaud, Gal. Moll. vol. i. p. 63, pl. xi. figs. 1, 2.

Homalonyx guadeloupensis, Fischer, Journ. de Conch. 1874, p. 138.

Succinea (Omalonyx) guadeloupensis, Angas, Proc. Zool. Soc. 1883, p. 595.

Hab. Guadeloupe; Dominica (*Angas*).

23. **Cyclophorus amethystinus* (Guppy).

Cyclotus amethystinus, Guppy, Ann. & Mag. Nat. Hist. 1868, vol. i. p. 433.

Cyclophorus amethystinus, Pfeiffer, Mon. Pneum. vol. iv. p. 112; Angas, Proc. Zool. Soc. 1883, p. 597.

Hab. Dominica (*Guppy, Angas, Ramage*).

24. *Cyclophorus Schrammi*, Shuttleworth.

Cyclostoma (Cyclophorus) Schrammi, Shuttleworth, Journ. de Conch. 1856, vol. v. p. 269.

Cyclophorus Schrammi, Pfeiffer, Mon. Pneum. vol. ii. p. 64.

Hab. Guadeloupe; Dominica (*Brown*).

25. *Helicina fasciata*, Lamarck.

Helicina fasciata, Lamk. Anim. s. Vert. vol. vi. p. 103; Pfr. Conch.-Cab. ed. 2, p. 48, pl. iii. figs. 26-35.

Helicina picta, Sowerby, Thesaurus Conch. vol. i. pl. ii. fig. 56, pl. iii. figs. 140, 141.

Helicina fasciata, id. op. cit. vol. iii. pl. cclxxiv. figs. 312, 313; id. Couch. Icon. pl. ix. fig. 73.

Hab. Porto Rico, St. Vincent, Barbados, Martinique, St. Kitts; Dominica (*Angas*).

26. *Helicina plicatula*, Pfeiffer.

Helicina plicatula, Pfr. Mon. Pneumon. vol. iv. p. 340; id. Conch.-Cab. p. 13, pl. viii. figs. 36-39.

Hab. Martinique; Dominica (*Guppy*).

27. *Helicina epistilia*, Guppy.

Helicina epistilia, Guppy, Ann. & Mag. Nat. Hist. 1868, vol. i. p. 433; Pfr. Mon. Pneumon. vol. iv. p. 254.

Hab. Dominica (*Guppy*).

28. *Helicina Guppyi*, Pease.

Helicina humilis, Guppy, Ann. & Mag. Nat. Hist. 1868, vol. i. p. 434.
Helicina Guppyi, Pease, Proc. Zool. Soc. 1871, p. 467; Pfeiffer, Mon. Pneumon. vol. iv. p. 257.

Hab. Dominica (*Guppy*).

29. **Helicina velutina*, Guppy.

Helicina velutina, Guppy, Ann. & Mag. Nat. Hist. 1868, vol. i. p. 434; Pfeiffer, Mon. Pneumon. vol. iv. p. 257; Angas, Proc. Zool. Soc. 1883, p. 597.

Hab. Dominica (*Guppy, Angas, Ramage*).

30. **Helicina rhodostoma*, Gray.

Helicina rhodostoma, Gray, Zool. Journ. vol. i. p. 68, pl. vi. fig. 9; Reeve, Conch. Syst. vol. ii. pl. clxxxvi. fig. 5; Sowerby, Thes. Conch. vol. i. pl. ii. fig. 71, vol. iii. pl. cclxxvii. figs. 412, 413; Pfeiffer, Conch.-Cab. ed. 2, p. 60, pl. vii. figs. 4, 5; Guppy, Ann. & Mag. Nat. Hist. 1868, vol. i. p. 435; Angas, Proc. Zool. Soc. 1883, p. 597.

Hab. Guadeloupe; Dominica (*Guppy, Angas, Ramage*).

31. *Helicina conuloides*, Guppy.

Helicina conuloides, Guppy, Ann. & Mag. Nat. Hist. 1868, vol. i. p. 435; Pfeiffer, Mon. Pneumon. vol. iv. p. 246.

Hab. Dominica (*Guppy*).

32. **Helicina platychila* (Mühlfeldt).

Helix platychilos, Mühlfeldt, Verhandl. Berl. Ges. i. 4, p. 219, pl. iii. fig. 11.

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Helicina platychila, Pfeiffer, Conch.-Cab. p. 24, pl. iv. figs. 22-24, pl. vii. figs. 8, 9.

Helicina lutea, Sowerby, Thes. Conch. vol. i. p. 6, pl. ii. fig. 59, pl. iii. fig. 142, vol. iii. p. 289, pl. cclxxiv. figs. 310, 311; id. Conch. Icon. pl. xi. figs. 87 a, b.

Hab. Guadeloupe, Martinique, Cuba?; Dominica (*Brown, Ramage*).

33. *Helicina antillarum*, Sowerby.

Helicina antillarum, Sowerby, Thes. Conch. vol. i. p. 7, pl. ii. figs. 68-70, vol. iii. p. 292, pl. cclxxv. figs. 359-361; id. Conch. Icon. pl. xx. figs. 176 a, b; Reeve, Conch. Syst. vol. ii. pl. clxxxvi. fig. 15; Pfeiffer, Conch.-Cab. p. 46, pl. iii. figs. 1-3; Crosse, Journ. de Conch. 1874, vol. xxii. p. 203, pl. iv. fig. 5.

Hab. Guadeloupe; Dominica (*Brown*).

XXX.—*Descriptions of new Species of Lepidoptera, chiefly from Central America.* By HERBERT DRUCE, F.L.S., F.R.G.S., F.Z.S.

THE new species of Central-American Heterocera will be figured in the 'Biologia Centrali-Americana.'

RHOPALOCERA.

PAPILIO, Linn.

Papilio Langeni, sp. n.

Primaries black, with three indistinct white spots forming a broken band beyond the cell, crossing the wing from near the costal margin towards the outer margin; secondaries black, with a large central creamy white band, in shape almost the same as in *P. albinus*, Wall. Underside of the primaries black, with the indistinct white spots as above: secondaries uniformly black, with a small orange streak well above the anal angle. In some specimens the white spots on the primaries are almost gone. Expanse $4\frac{3}{4}$ inches.

Hab. Ké Island (Mus. Druce, Godman and Salvin).

This species is allied to *P. albinus*, Wallace, from New Guinea; but it is at once distinguished from that insect by the entirely black underside of the secondaries. I have little doubt that it is peculiar to Ké Island.